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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,326	02/26/2002	Ikuo Uratani	NIT-332	3456

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Mattingly, Stanger & Malur, P.C  
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Alexandria, VA 22314

EXAMINER
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SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
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2141

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/082,326

Applicant(s)

URATANI ET AL.

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendments*

*Claims 1-14 have been cancelled.*

*Claims 15-24, 27 and 28 have been amended.*

*Claims 15 - 29 are pending.*

### *Response to Arguments*

I. Applicant's arguments with respect to claims 15, 20 and 24 have been considered but are moot in view of the new ground(s) of rejection.

II. Applicant's 6/20/2006 filing of a Request for Continued Examination (RCE) is improper, since Applicant's amendment is in response to the Non-Final Office Action mailed on 3/20/2006. Continued examination under 37 CFR 1.114 does not apply to an application unless prosecution in the application is closed. Thus, Applicant's filed reply and amendments have been entered and considered under 37 CFR 1.111, wherein this action is made FINAL as necessitated by the amendments.

### *Claim Objections*

III. **Claim 15** is objected to because of the following informalities: misspelling—"than" in line 8 should be "that". Appropriate correction is required.

### *Claim Rejections - 35 USC § 112, first paragraph*

IV. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**V. Claims 15, 17, 19, 20, 21 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

The claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- **Regarding Claim 15:** the specification fails to explicitly teach the following features found in Claim 15—“wherein said management logical unit is used to couple one of said logical units with another one of said logical units in response to an instruction received from one of said host computer adapters, wherein said first host computer adapter can command coupling of two logical units in said first group of logical units by using said management logical unit, and cannot command coupling of two logical units in said second group of logical units; wherein the second host computer adapter can command the coupling of two logical units in said second group of logical units by using said management logical unit, but cannot command the coupling of two logical units in said first group of logical units”—clarification and/or correction is required.
- **Regarding Claim 21:** the specification fails to distinctly teach the following limitation of Claim 21—“issuing the instructions for a coupling operation by the host for directing coupling of one of the first logical units to another of the first logical units”—clarification and/or correction is required.
- **Regarding Claim 24:** the specification fails to distinctly teach the following limitation of Claim 24—“wherein the storage system processes the coupling operation in accordance with the instructions written to the command device for coupling one of the first logical units to another one of the first logical units”—clarification and/or correction is required.
- **Regarding Claims 15, 17, 19, 20 and 24:** the specification fails to distinctly teach the following element recited in the listed claims—“a management logical unit”—clarification and/or correction is required.
- **Regarding Claim 28:** the specification fails to distinctly teach the following limitation of Claim 24—“wherein the command device is a shared logical unit used exclusively for communication with the host computer for controlling coupling operations between logical units”—clarification and/or correction is required.

*Claim Rejections - 35 USC § 112, second paragraph*

**VI.** The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

**VII. Claims 15, 16, 24 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

a. **Claim 15** recites the limitations:

- "said second group of logical units" in lines 8-9, 16-17 and 19;
- "said first group of logical units" in lines 9, 14-15 and 20-21;
- "one of said logical units" in lines 10-11;
- "another one of said logical units" in line 11;
- "two logical units" in lines 14, 16, 18-19 and 20;
- "logical units" in lines 33 and 36;
- "any logical units" in line 37-38.

There is insufficient antecedent basis for these limitations in the claim.

b. **Claim 16** recites the limitation "logical units" in line 2. There is insufficient antecedent basis for this limitation in the claim.

c. **Claim 24** recites the limitations:

- "extended logical unit information" in line 13. There is insufficient antecedent basis for this limitation in the claim.
- The term "virtually" in claim 24 is a relative term, which renders the claim indefinite. The term "virtually" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Clarification and/or correction is required.

d. **Claim 28** recites the limitation "logical units" in line 3. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

VII. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

VIII. **Claims 15 - 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ito et al* (US 2006/0190696) in view of *Sicola et al* (US 6,643,795) and *Teruo* (US 6,604,165).

a. Per claim 15, *Ito et al* teach a computer system comprising:

- a storage system having a plurality of logical units defined and having a management logical unit as a command device dedicated for coupling control for controlling coupling between the plurality of logical units (*Figure 1; page 4 paragraphs 0063-0066*);
- a first host computer adapter for a host computer that can access a first group of first logical units of said plurality of logical units and that cannot access a second group of second logical units of said plurality of logical units (*pages 2-3 paragraphs 0042-0043 and 0054; page 4 paragraphs 0064 and 0071; page 5 paragraphs 0080-0082 and 0086-0089; pages 5-6 paragraphs 0090-0100—provision for a first host port interface to access a first group of logical units but unable to access another group of logical units*);
- a second host computer adapter that can access said second group of logical units, but that cannot access said first group of logical units (*pages 2-3 paragraphs 0042-0043 and 0054; page 4 paragraphs 0064 and 0071; pages 5-6 paragraphs 0090-0100—provision for a second host port interface to access a second group of logical units but unable to access a first group of logical units*);
- wherein the storage system adds extended logical unit numbers used in coupling to a response of an inquiry command from said host to a specified logical unit, each said extended logical unit number including a connection port, a target ID, and a logical unit number (*Figures 7, 9 and 11; pages 7-8 paragraphs 0115-0125*).

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*and 0128—provision for extended LUNs and indicia for LUNs including WWN ID, Group ID and LUN number);*

- whereby the application obtains a list of extended logical unit numbers corresponding to logical units accessible by the host out of said plurality of logical units (*page 6 paragraphs 0092-0094 and 0097; page 7 paragraphs 0104-0109—provision for LUN access management table which associates the LUNs with the hosts*); and
- wherein the application rejects a request of a coupling operation directed to logical units other than said logical units corresponding to the extended logical unit numbers on the list, thereby inhibiting coupling operations directed to any logical units not accessible by the host (*page 7 paragraph 0117; page 8 paragraphs 0121 and 0124*).

*Ito et al* teach commands issued by the host for accessing LUN(s) available to the host (*Figure 17; page 4 paragraphs 0074-0075; page 7 paragraphs 0113-0115; page 8 paragraphs 0122-0123 and 0127-0128*), yet, *Ito et al* fail to explicitly teach: wherein said management logical unit is used to couple one of said logical units with another one of said logical units in response to an instruction received from one of said host computer adapters; wherein said first host computer adapter can command coupling of two logical units in said first group of logical units by using said management logical unit, and cannot command coupling of two logical units in said second group of logical units; wherein the second host computer adapter can command the coupling of two logical units in said second group of logical units by using said management logical unit, but cannot command the coupling of two logical units in said first group of logical units; and an application included on said host for issuing the instruction for coupling operations among said plurality of logical units, said application capable of issuing the instructions for the coupling operations to said management logical unit.

However, *Terao* teaches that the host is capable of issuing commands for linking between particular LUNs in order to transfer data from one LUN to another (*Figures 2B, 13;*

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*col.3 lines 25-35; col.5 lines 12-55; col.6 lines 41-50; col.13 lines 51-67*). *Sicola et al* further teach a host comprising two adapters, wherein the host is able to request an I/O operation which links the two local LUNs, associated with each adapter, to remote volumes (*col.8 lines 20-22, col.9 lines 1-23*). Furthermore, *Sicola et al*, teach the use of a list including the associated host, Node ID or WWID, LUN and target ID and extending LUNs for coupling to the host (*col.8 lines 45-52, col.11 lines 37-47, col.17 line 55-col.18 line 6, col.18 lines 42-59*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Ito et al* with *Sicola et al* and *Terao* for the purpose of implementing host commands to access, link, read/write to their associated LUNs while allowing only specific hosts and/or adapter to access the LUNs allocated to them; which provides prevents illegal access to information and insures the integrity of reading/writing data into respective LUNs.



b. **Claims 20 and 24** contain limitations that are substantially equivalent to claim 15 and are therefore rejected under the same basis.

c. **Per claim 16**, *Ito et al* with *Sicola et al* and *Terao* teach the computer system of claim 15, *Terao* further teaches wherein said coupling operations are for copying logical units (*col.5 lines 12-55; col.6 lines 41-50; Sicola et al: col.5 line 62-col.6 line 19, col.6 line 63-col.7 line 8, col.9 lines 1-46*).

d. **Claim 25** is substantially equivalent to claim 16 and is therefore rejected under the same basis.

e. **Per claim 17**, *Ito et al* with *Sicola et al* and *Terao* teach the computer system of claim 15, *Ito et al* further teach wherein the management logical unit is shared between a plurality of ports (*page 4 paragraph 0064-0068; Terao: Figure 3, col.6 lines 9-15 and 46-58, col.10 lines 40-43*).

f. **Claim 26** is substantially equivalent to claim 17 and is therefore rejected under the same basis

g. **Per claim 18**, *Ito et al* with *Sicola et al* and *Terao* teach the computer system of claim 15, *Terao* further teaches wherein said host is capable of issuing a command for the coupling operation only via the application (*Figures 2B, 13; col.3 lines 25-35; col.5 lines 12-55; col.6 lines 41-50; col.13 lines 51-67; Sicola et al: col.8 lines 20-22, col.9 lines 1-23*).

h. **Claim 27** is substantially equivalent to claim 18 and is therefore rejected under the same basis.

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i. **Per claim 19**, *Ito et al* with *Sicola et al* and *Terao* teach the computer system of claim 18, *Terao* further teaches wherein the instruction for the coupling operation is written into the management logical unit as data, and the storage system processes the data written into the management logical unit for performing the coupling operation (*Figures 2B, 13; col.3 lines 25-35; col.5 lines 12-55; col.6 lines 9-15 and 46-58; col.13 lines 51-67; Sicola et al: col.8 lines 20-22, col.9 lines 1-23*).

j. **Claims 21-23** are substantially equivalent to claims 18 and 19 and are therefore rejected under the same basis.

k. **Per claim 28**, *Ito et al* with *Sicola et al* and *Terao* teach the computer system of claim 24, *Terao* further teaches wherein the command device is a shared logical unit used exclusively for communication with the host computer for controlling coupling operations between logical units (*Figures 2B, 3 and 13; col.3 lines 25-35; col.5 lines 12-55; col.6 lines 9-15, 41-50 and 46-58; col.10 lines 40-43; col.13 lines 51-67; Sicola et al: col.8 lines 20-22, col.9 lines 1-23*).

l. **Per claim 29**, *Ito et al* with *Sicola et al* and *Terao* teach the computer system of claim 24, *Ito et al* further teach wherein said extended logical unit information includes a connection port, a target ID, and a logical unit number (*Figures 7, 9 and 11; pages 7-8 paragraphs 0115-0125 and 0128; Sicola et al: col.8 lines 45-52, col.11 lines 37-47, col.17 line 55-col.18 line 6, col.18 lines 42-59*).

*Conclusion*

**IX.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: D'Errico (6,216,202), Matsunami et al (6,910,102), DeKoning (6,304,942), Kedem (6,725,331), Otterness et al (6,654,831).

**X.** Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

**XI.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kristie Shingles*  
*Examiner*  
*Art Unit 2141*

*kds*



**RUPAL DHARIA**  
**SUPERVISORY PATENT EXAMINER**